1 9626/12/F/M/17/Q4

There are many types of user interface in computerised systems. Three types are a graphical user interface, a dialogue interface and a gesture based interface.

Evaluate these types of user interface.

[8]

STUDENTS RESOURCE



CamScanner

2 9626/12/F/M/17/Q5(a)

Avtar is a recently appointed network manager in a school. In his role he will need to use a variety of utility software.

(a) Describe, in detail, each of the following utilities.

(i) anti-virus software:

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(ii) data compression:

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(iii) disk defragmentation:

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..... [3]

STUDENTS RESOURCE



CamScanner

(iv) disk formatting:

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3 9626/12/F/M/17/Q7

Atat Iron Ltd uses computers to process its payroll. The company pays its workers weekly which involves the updating of a master file.

Two sets of data are shown below.
The first set represents part of a transaction file containing workers' ID numbers and the hours worked by those workers in a particular week.
The second set represents part of the master file used by the company. This shows the workers' ID numbers, departments they work in and the rate per hour at which they are paid in Indian Rupees (₹).

**Transaction file**

| Workers_ID_number | Hours_worked |
|---|---|
| 047006 | 40 |
| 486439 | 40 |
| 592786 | 38 |
| 758789 | 40 |
| 512759 | 37 |
| 869891 | 40 |
| 471584 | 38 |
| 131654 | 40 |
| 243303 | 40 |
| 235804 | 35 |

**Master file**

| Workers_ID_number | Department | Hourly_rate (₹) |
|---|---|---|
| 031597 | Extrusion | 62 |
| 047006 | Cold rolling | 55 |
| 131654 | Extrusion | 62 |
| 235804 | Foundry | 50 |
| 239412 | Foundry | 50 |
| 243303 | Hot rolling | 58 |
| 471584 | Cold rolling | 55 |
| 486439 | Tube production | 65 |
| 500368 | Extrusion | 62 |
| 512759 | Tube production | 65 |
| 592786 | Foundry | 50 |
| 758789 | Tube production | 65 |
| 869891 | Extrusion | 62 |
| 942378 | Hot rolling | 58 |

(a) Describe what processes must happen before the updating can begin.

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..... [2]

STUDENTS RESOURCE



CamScanner

(b) Using this data, explain how a transaction file is used to update a master file in a payroll system. You may assume that the only transaction being carried out is the calculation of the weekly pay before tax and insurance deductions.

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STUDENTS RESOURCE



CamScanner

(c) When a new worker is added to the master file, the data must be validated. His hourly rate will be 50 Rupees.

Without using a type check, describe **three** other validation checks you would develop to make sure **all** the data entered is sensible.

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STUDENTS RESOURCE



CamScanner

4 9626/11/M/J/17/Q6

High-level languages can be translated using a compiler or an interpreter.

**(a)** Describe the features of a compiler.

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**(b)** Describe the features of an interpreter.

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STUDENTS RESOURCE



CamScanner

5 9626/13/M/J/17/Q11

A manager of a small business wants to update her computer system. When considering which software to use, she has to choose between custom written software and off-the-shelf software.

Describe what is meant by these two types of software.

(a) Custom written:

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(b) Off-the-shelf:

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STUDENTS RESOURCE



CamScanner

6 9626/11/O/N/17/Q1

(a) Tick the **most accurate** statement about the use of a compiler.

| | ✓ |
|---|---|
| A compiler executes a high-level program one statement at a time before translating the next statement. | |
| A compiler converts object code into source code. | |
| A compiler translates machine code into a high-level language program. | |
| A compiler often produces a separate object code program. | |

[1]

(b) Tick the **most accurate** statement about the use of a linker.

| | ✓ |
|---|---|
| A linker executes a high-level program one statement at a time before translating the next statement. | |
| A linker takes one or more source code files and combines them into a single executable file. | |
| A linker takes one or more object files and combines them into a single executable file. | |
| A linker is used in conjunction with an interpreter. | |

[1]

STUDENTS RESOURCE



CamScanner

7 9626/11/O/N/17/Q9

Siegfreid has created a word processed document using 'proprietary software'. Simon has suggested that he should save it in an 'open-source file format'.

(a) Describe what is meant by 'proprietary software'.

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(b) Describe what is meant by an 'open-source file format'.

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..... [3]

STUDENTS RESOURCE



CamScanner

8 9626/11/M/J/18/Q2

Tick the **four** most accurate statements referring to different types of user interface.

| | ✓ |
|---|---|
| A mouse is essential for entering commands when using a command line interface. | |
| Computer beginners often prefer to use a command line interface. | |
| A graphical user interface does not require the user to learn many commands off by heart. | |
| Users can only draw charts when using a graphical user interface. | |
| A graphical user interface consists of windows, icons, menus and pointers. | |
| A microphone is needed to input commands into a dialogue interface. | |
| A dialogue interface requires the user to be a computer expert. | |
| A gesture based interface does not require the use of any input devices. | |
| A gesture based interface usually concentrates on face and hand movements. | |
| The time taken for a command to be given and the response appearing on the screen is not important in a dialogue based interface. | |

[4]

9 9626/12/M/J/18/Q2

Tick the **four** most accurate statements referring to hardware and software.

| | ✓ |
|---|---|
| Compilers and linkers are examples of system software. | |
| Device drivers and interpreters are examples of application software. | |
| Word processing and spreadsheets are examples of hardware. | |
| Software is another name for computer programs. | |
| Software is written in machine code before being converted to high-level language. | |
| Viruses are a type of software. | |
| Malicious bots are a type of hardware. | |
| System software directly operates the computer hardware. | |
| Operating systems are types of hardware. | |
| A mouse and keyboard are the basic software components of a computer. | |

[4]

STUDENTS RESOURCE



CamScanner

10 9626/12/M/J/18/Q4

Many personal computers are bought with certain types of software already installed. This includes a number of items of utility software.

Describe how each of the following utilities carries out its function.

(a) Anti-virus software .....

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(b) Backup software .....

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.....[2]

(c) Disk defragmentation software .....

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STUDENTS RESOURCE



CamScanner

**11 9626/13/M/J/18/Q3**

When data is entered into a database it needs to be checked for accuracy. One of the methods used to help in this process is verification.

Compare and contrast the different methods used to carry out verification.

[5]

**12 9626/13/M/J/18/Q4**

Jasmine is carrying out a study of the effect of pollution on her local countryside. She intends to use data from direct data sources as well as indirect data sources.

Describe what is meant by direct and indirect data sources using examples from this scenario.

[6]

STUDENTS RESOURCE



CamScanner

13 9626/13/M/J/18/Q5

Joseph has written a program using a high level language. He now needs to get it translated for use on his computer.

Compare and contrast the use of a compiler with an interpreter for this purpose.

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14 9626/11/O/N/18/Q2

Tick the **four** statements which are true regarding user interfaces.

| | ✓ |
|---|---|
| The colours used in a dialogue interface are of key importance. | |
| A mouse is an essential input device when using a command line interface. | |
| A graphical user interface requires you to type in a large number of instructions. | |
| A command line interface is mainly used by more advanced computer users. | |
| A gesture based interface allows users to point with their fingers as a method of input. | |
| A command line interface needs menus and icons to operate it. | |
| A dialogue interface can interpret hand movements to carry out commands. | |
| A gesture based interface is very reliable as most users have similar gestures for communicating. | |
| The font size is the most important feature of a command line interface. | |
| A graphical user interface involves the use of windows and pointers. | |

[4]

STUDENTS RESOURCE



CamScanner

15 9626/12/F/M/19/Q4

There are many types of systems software including interpreters and device drivers.

(a) In order for a computer to output to a printer it uses a printer driver. This is just one of many device drivers a computer uses.

Explain the purpose of device drivers.

[4]

(b) Describe the function of an interpreter.

[4]

STUDENTS RESOURCE



CamScanner

16 9626/11/M/J/19/Q7

An operating system is system software that manages computer hardware and software resources.

Describe the tasks that an operating system carries out.

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STUDENTS RESOURCE



CamScanner

17 9626/11/M/J/19/Q13

IT professionals often use command line interfaces (CLIs) to communicate with computers. Office workers, however, prefer graphical user interfaces (GUIs). In the home, gesture based interfaces (GBIs) are increasingly being used.

Evaluate these three types of interface.

[8]

STUDENTS RESOURCE



CamScanner

18 9626/13/M/J/19/Q5

A headteacher is updating the school's record-keeping system. For the new system he is considering using off-the-shelf software. When the new system is running the secretary will need to enter all the students' data. This will require accurate entry of the data.

**(a)** Define what is meant by the term 'software' and describe, giving examples of each, application and system software.

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**(b)** Describe the benefits of using off-the-shelf software.

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STUDENTS RESOURCE



CamScanner

(c) Describe the drawbacks of using off-the-shelf software.

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(d) Describe the different methods of verification the secretary could use.

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STUDENTS RESOURCE



CamScanner

19 9626/11/O/N/19/Q3

Most computer systems consist of hardware and software.

(a) Define the term 'hardware' in an IT context.

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(b) Giving brief descriptions of **two** examples, define the term utility software.

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20 9626/11/O/N/19/Q6(b)

(b) Describe the features of a user interface which need to be considered when planning its design. Where appropriate, give examples of each feature.

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STUDENTS RESOURCE



CamScanner

21 9626/12//O/N19/Q3

A hockey club secretary is planning to computerise the players' records. For this system she is considering using custom written software.

(a) Describe the drawbacks of using custom written software.

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(b) Describe the benefits of using custom written software.

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STUDENTS RESOURCE



CamScanner

22 9626/12/O/N/19/Q7

Sadiq has written a program that he now wishes to convert using a compiler.

(a) There are two types of software. Name them, indicating which type a compiler is.

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(b) Describe the function of a compiler.

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STUDENTS RESOURCE



CamScanner

23 9626/12/F/M/20/Q6

Many people have computers and devices in the home and in their cars that can be controlled using a gesture based interface or a dialogue interface.

Evaluate, by weighing up the advantages and disadvantages, these two user interfaces when compared to each other.

[8]

STUDENTS RESOURCE



CamScanner

24 9626/11/M/J/20/Q2

(a) Tick the most accurate statement referring to the use of compilers and interpreters.

| | ✓ |
|---|---|
| An interpreter creates a single executable file that runs directly on the CPU | |
| It is easier to debug compiled code rather than interpreted code | |
| With a compiler it is harder to protect intellectual property as machine code is easy to understand | |
| It is more difficult for hackers to modify compiled code | |

[1]

(b) Tick the most accurate statement referring to the use of disk formatting.

| | ✓ |
|---|---|
| Disk formatting increases the number of fragments in a hard disk | |
| Disk formatting never removes viruses from a hard disk | |
| Disk formatting increases the storage capacity of a blank disk | |
| Disk formatting is used to fully prepare a hard disk for initial use | |

[1]

STUDENTS RESOURCE



CamScanner

25 9626/11/M/J/20/Q7

Designers of user interfaces tend to base their designs on what they interpret to be a user's mental model.

Evaluate, by weighing up the advantages and disadvantages, the use of a mental model to design a user interface.

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..... [6]

STUDENTS RESOURCE



CamScanner

26 9626/12/M/J/20/Q12

A headteacher wishes to buy software which will help him manage the finances of the school. When considering which software to buy he has to choose between custom written software and off-the-shelf software.

Describe the differences between these two types of software.

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STUDENTS RESOURCE



CamScanner

27 9626/13/M/J/20/Q7

A program written in a simple high level programming language has a mistake in it.

Line 20 should say LET A = X + Y, but the program was typed as:

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10 INPUT X, Y
20 LE A = X + Y
30 PRINT X, " + ",Y, " = ", A
40 END
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Describe the **two** ways the program, including the error, could be translated so that it runs on a computer.

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[6]



STUDENTS RESOURCE

CamScanner

28 9626/13/M/J/20/Q9

There are two types of encryption, symmetric and asymmetric.

(a) Describe the use of public keys and private keys when used in the asymmetric method of encryption.

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(b) Apart from the types of keys used, give **two** reasons why symmetric encryption is preferred in certain situations.

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STUDENTS RESOURCE



CamScanner

29 9626/11/O/N/20/Q2

(a) Tick the statement which most accurately refers to the results of using utility software.

| | ✓ |
|---|---|
| Lossless compression reduces the number of bits by increasing redundant data | |
| Some information is lost in lossless compression | |
| Lossy compression reduces the number of bits by identifying unnecessary information and removing it | |
| Disk defragmentation organises the contents of the disk into the largest number of contiguous regions | |

[1]

(b) Tick the statement which most accurately refers to the properties of a hard disk.

| | ✓ |
|---|---|
| Data access is faster on a hard disk with fragmented files than on a defragmented hard disk | |
| Disk formatting prepares a data storage device for initial use | |
| The first stage of formatting is high-level formatting followed by low-level formatting | |
| Disk partitioning makes the data storage device invisible to an operating system | |

[1]

(c) A type of utility software enables files to be deleted.

Explain how the delete utility works and how files can be recovered even after they appear to have been deleted.

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..... [4]

STUDENTS RESOURCE



CamScanner

30 9626/11/O/N/20/Q8

Describe the differences between a compiler and an interpreter.

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31 9626/12/O/N/20/Q7

Describe the roles of a compiler and a linker and explain why both might be necessary in the conversion of a high-level language program.

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..... [6]

STUDENTS RESOURCE



CamScanner

32 9626/12/O/N/20/Q12

When a person buys a PC it comes with a variety of hardware and software.

(a) Define the term software.

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(b) Explain why the two types of software are needed by a PC user.

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STUDENTS RESOURCE



CamScanner

(a) Tick the most accurate statement referring to a gesture-based interface.

| | ✓ |
|---|---|
| It is easier for users with physical disabilities to use a keyboard or mouse than make gestures. | |
| It is easier to enter text with a gesture-based interface than with a command line interface. | |
| Gestures are more accurately interpreted than mouse clicks. | |
| Some gestures may be unintentional but still initiate a reaction from the device. | |

[1]

(b) Tick the most accurate statement referring to a dialogue interface.

| | ✓ |
|---|---|
| Dialogue interfaces are more difficult to use than command line interfaces. | |
| A dialogue interface uses less memory than a command line interface. | |
| A dialogue interface may not operate reliably if there is background noise. | |
| Dialogue interfaces have unlimited vocabularies. | |

[1]

STUDENTS RESOURCE



CamScanner

(c) Many software developers use a command line interface (CLI).

Evaluate, by weighing up the advantages and disadvantages, a CLI compared to a graphical user interface (GUI).

[8]

STUDENTS RESOURCE



CamScanner

34 9626/12/F/M/21/Q5

Joan has written some gaming software in a high-level programming language. She intends to publish and sell copies of the game. She wants to test it on her computer. The software will be converted into a lower-level language.

Evaluate, by weighing up the advantages and disadvantages, the use of a compiler for this purpose.

..... [7]

STUDENTS RESOURCE



CamScanner

35 9626/13/M/J/21/Q3

Explain how the following tasks are carried out using utility software:

(a) data compression

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(b) disk formatting

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..... [3]

(c) file deletion.

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..... [3]

STUDENTS RESOURCE



CamScanner

36 9626/11/O/N/21/Q5

A company owner wishes to buy software to use to produce advertising materials for her company. She can either buy custom written software or off-the-shelf software.

(a) Describe **three** benefits of using custom written software.

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(b) Describe **three** benefits of using off-the-shelf software.

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STUDENTS RESOURCE



CamScanner

37 9626/12/O/N/21/Q1

A printer driver is a type of device driver.

(a) Tick the most accurate statement regarding printer drivers.

| | ✓ |
|---|---|
| They are used to control the hard disk drive. | |
| They handle the translation of requests between the computer and the printer. | |
| One printer driver can control any printer. | |
| They ensure that there are no paper jams. | |

[1]

(b) Tick the most accurate statement regarding device drivers in general.

| | ✓ |
|---|---|
| One device driver works with every operating system. | |
| Device drivers are extra hardware inside the device. | |
| Upon installation, a device driver detects and identifies the peripheral device. | |
| A device driver is needed to control the central processing unit of a computer. | |

[1]

STUDENTS RESOURCE



CamScanner

(c) Explain the purpose of an operating system.

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STUDENTS RESOURCE



CamScanner

38 9626/12/O/N/21/Q2

A user interface is the method by which a user and a computer exchange information in instructions.

(a) Tick the most accurate statement referring to the use of colour in a user interface for users who suffer from colour blindness (colour vision deficiency).

| | |
|---|---|
| It is good practice to use complementary colours such as red text on a green background. | ✓ |
| It is good practice to use text in small sizes and weights to emphasise it against a different-coloured background. | |
| It is good practice to always use as many colours as possible when designing an interface. | |
| It is good practice to use a soft-coloured background such as grey or cream to allow text of a different colour to be read more easily. | |

[1]

(b) Tick the most accurate statement referring to elements of a user interface.

| | |
|---|---|
| Radio buttons only allow you to select one option from a list. | ✓ |
| A text box does not allow you to type numbers into it. | |
| Text should use the same font size whether the information is important or less important. | |
| It is a good idea to have a different font size for each word in a title. | |

[1]

STUDENTS RESOURCE



CamScanner

(c) A developer has been asked to produce software. The software will allow a company's employees to enter data. The user interface will be a graphical user interface (GUI) and must be easy to use.

Describe **four** features of the layout of such a user interface.

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STUDENTS RESOURCE



CamScanner

39 9626/13/O/N/21/Q2

(a) Tick the most accurate statement referring to software.

| | ✓ |
|---|---|
| An operating system is an example of application software. | |
| Software consists of data or computer instructions. | |
| Software consists of RAM and ROM chips. | |
| A buffer is an example of application software. | |

[1]

(b) Tick the most accurate statement referring to system software.

| | ✓ |
|---|---|
| A spreadsheet is an example of system software. | |
| A blu-ray disc is an example of system software. | |
| A printer driver is an example of system software. | |
| Control software is an example of system software. | |

[1]

(c) A company stores all its sales records in a spreadsheet.

Discuss the benefits and drawbacks of using a spreadsheet for this purpose.

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[6]

STUDENTS RESOURCE



CamScanner

40 9626/13/O/N/21/Q8

After a program is written in a high-level programming language, it has to be converted into a lower level of language.

Evaluate, by weighing up the advantages and disadvantages, the use of an interpreter for this purpose.

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STUDENTS RESOURCE



CamScanner

41 9626/12/F/M/22/Q2

An interpreter is a type of system software.

Describe how an interpreter operates.

[4]

42 9626/12/F/M/22/Q3

Mainframe computers are particularly suited to carrying out the transaction processing of online banks.

(a) Describe the features of a transaction processing system.

[3]

STUDENTS RESOURCE



CamScanner

(b) Discuss the advantages and disadvantages of the use of mainframe computers.

[8]

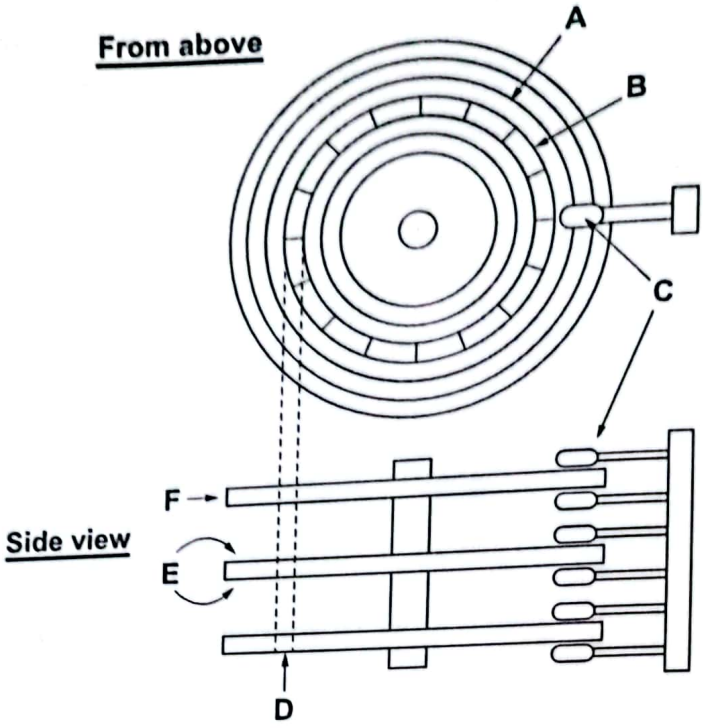
STUDENTS RESOURCE



CamScanner

43 9626/11/M/J/22/Q5

Here is a diagram showing the component parts of a hard disk drive.




(a) Describe the component parts of a hard disk drive. Refer to the labelled diagram in your answer.

[6]

STUDENTS RESOURCE



CamScanner

(b) Explain what is meant by disk defragmentation and why it is needed when using hard disks.

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44 9626/11/M/J/22/Q11

A gesture based interface is a type of user interface.

Describe the advantages of using a gesture based interface rather than other types of interface.

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STUDENTS RESOURCE



CamScanner

45 9626/12/M/J/22/Q4

The performance of mainframe computers and supercomputers is often measured using performance metrics.

Compare, by describing the similarities and differences between them, the different types of performance metrics.

[6]

STUDENTS RESOURCE



CamScanner

9626/12/M/J/22/Q5

When a high level language program is written, it has to be translated so the computer can run it. This can be achieved using a compiler or an interpreter.

Discuss the advantages and disadvantages of using a compiler rather than an interpreter.

[8]

STUDENTS RESOURCE



CamScanner

47 9626/13/M/J/22/Q2

Explain how high level language programs can be translated to run on different computer systems, including any difficulties which may result from this.

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STUDENTS RESOURCE



CamScanner

8 The directors of a company wish to create a database of customers. They are not sure whether they should ask a computer programmer to produce custom written software or they should purchase off-the-shelf software.

(a) Describe the features of custom written software.

[4]

(b) Describe the features of off-the-shelf software.

[4]

STUDENTS RESOURCE



CamScanner

49 9626/13/M/J/22/Q5

A doctor drives to work. While at work and while travelling, the doctor uses a number of IT-based devices. She uses a dialogue interface to control these devices.

Discuss the advantages and disadvantages of the doctor using a dialogue interface rather than a graphical user interface (GUI).

[8]

STUDENTS RESOURCE



CamScanner